

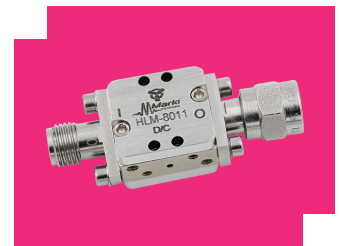
HLM-8011U

Low Flat Leakage DC-30GHz Limiter

DEVICE OVERVIEW

General Description

The HLM-8011 is a high-power GaAs Schottky diode signal limiter featuring high IP3 and high power handling. It offers low insertion loss and low return loss from DC through Ka band and has a typical 1dB compression point of +9dBm. Its low flat leakage makes it ideal for protecting sensitive components and for applications requiring high linearity. It is available as a wire bondable die and as a connectorized module.



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Features

- DC to 30 GHz limiter
- 4.5W Peak Power (pulsed), 30dBm CW
- +7dBm Flat Leakage @ 1W CW
- Typical P1dB of +9dBm

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Packing Size	Green Status	Product Lifecycle	Export Classification
HLM-8011U	Low Flat Leakage DC-30GHz Limiter	U	-		Released	EAR99

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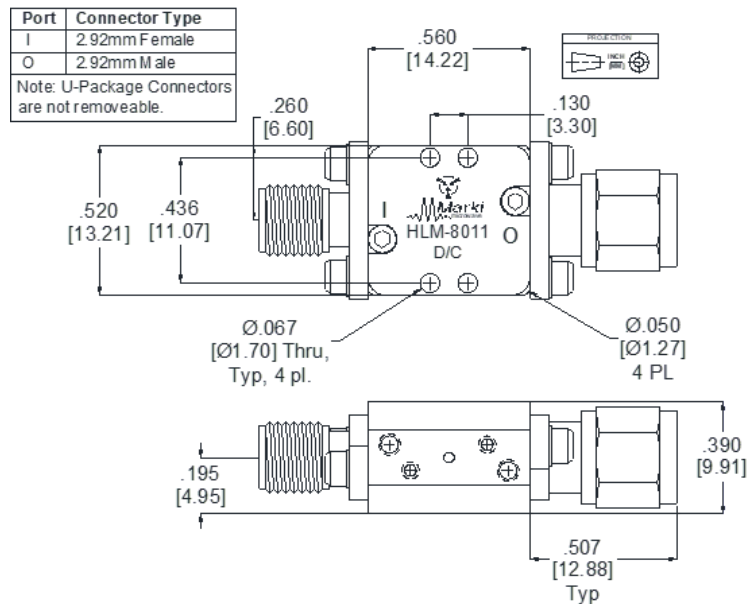
Revision History

Revision Code	Revision Date	Comment
-	2023-03-01	Initial Release

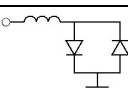
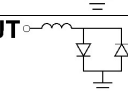
Port Configuration and Functions

Port Diagram

The HLM-8011 has the input and output ports given in Port Functions.



Port Functions

Port	Function	Description	Equivalent Circuit for Package
GND	Ground	U package ground provided through metal housing and outer coax conductor.	GND 
IN	Input	The input port is diode connected for the U package.	IN 
OUT	Output	The output port is diode connected for the U package.	OUT 

Specifications

Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded, the device may be inoperable or have a reduced lifetime.

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C
RF Power Handling , Average	1	W
RF Power Handling , Peak	4.5	W

Package Information

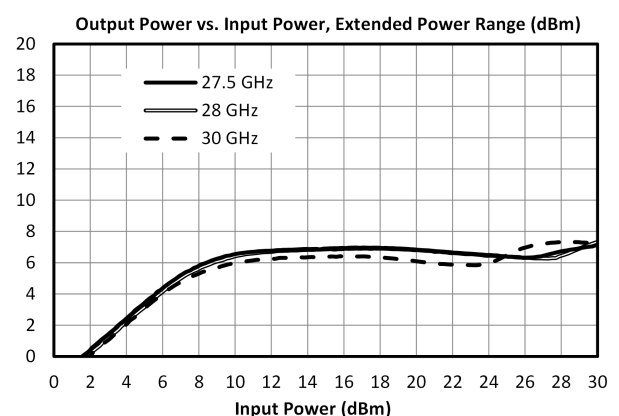
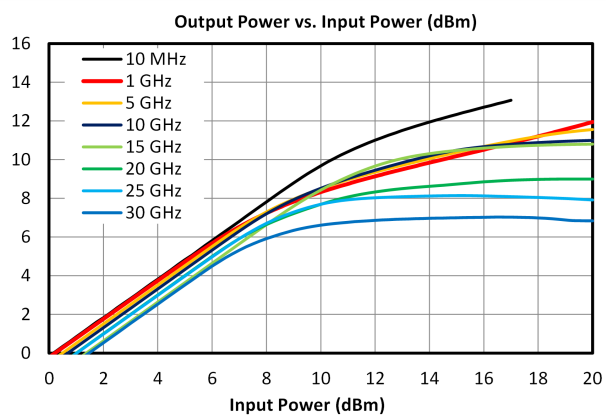
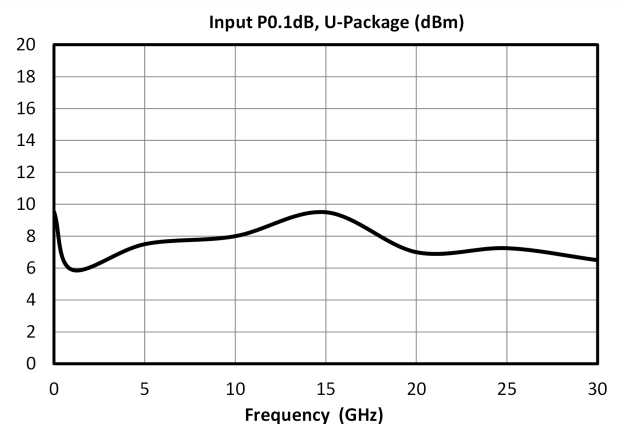
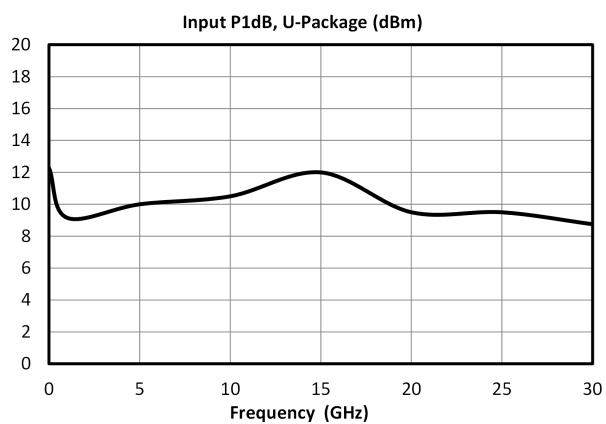
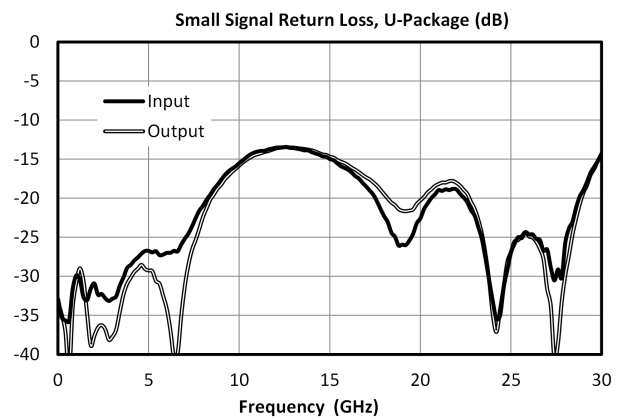
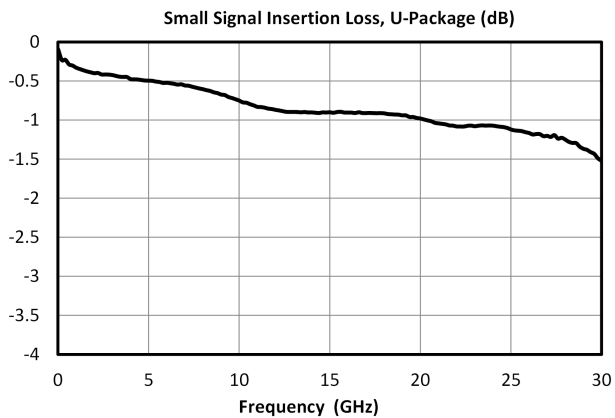
Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Weight	Package name: U	10g
Dimensions	-	14.22x13.21mm

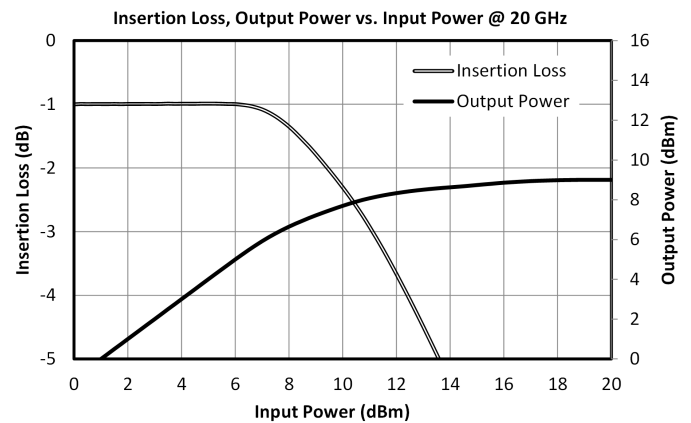
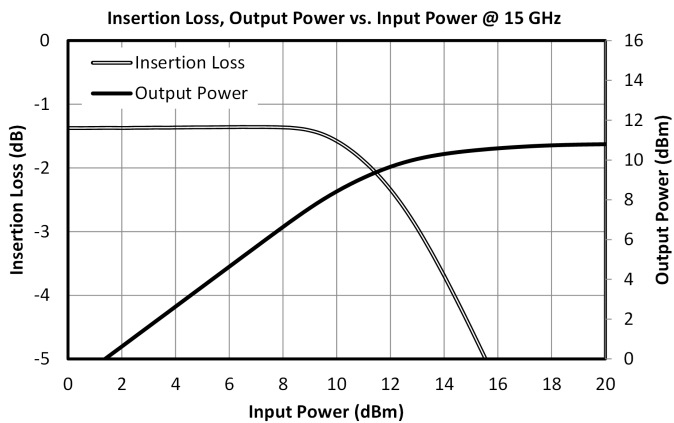
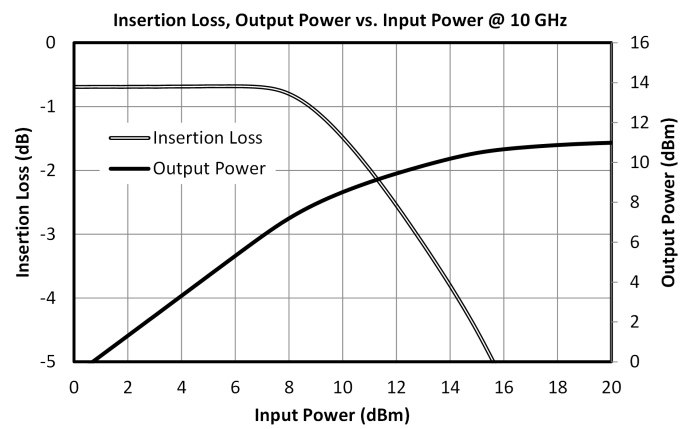
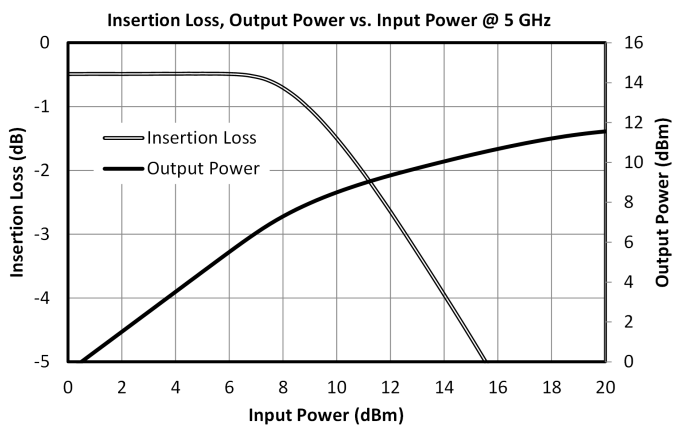
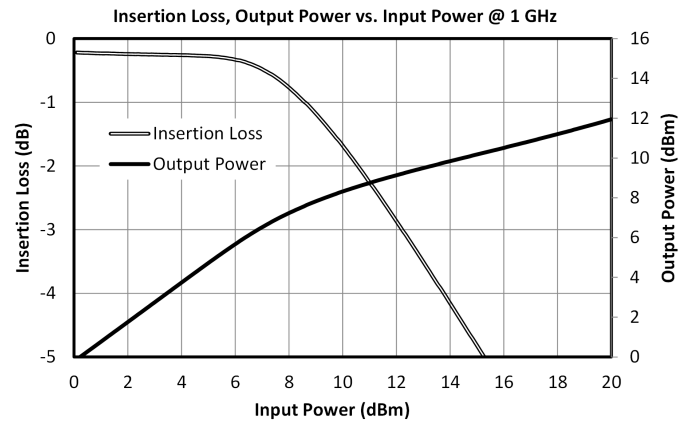
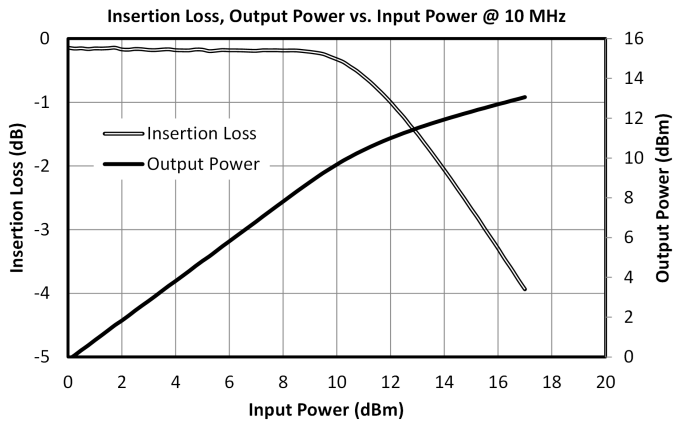
Electrical Specifications

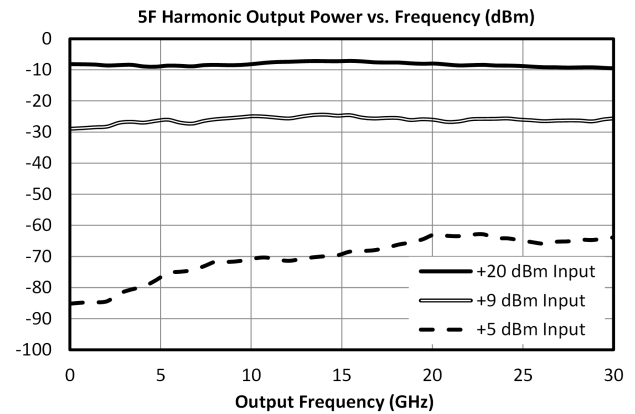
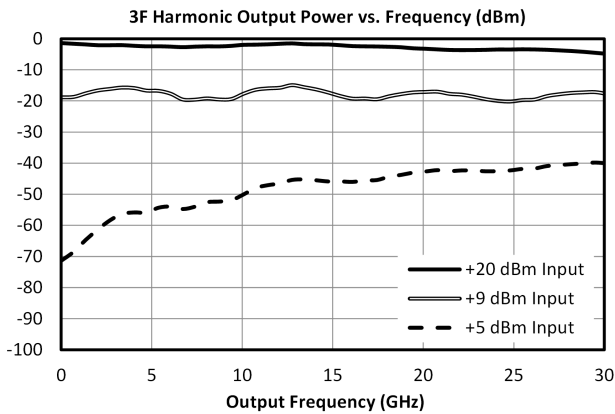
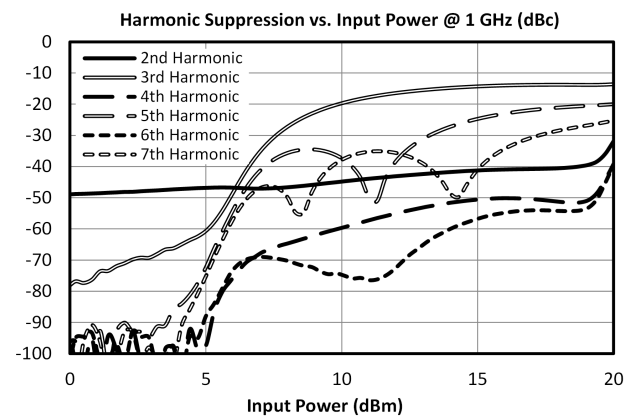
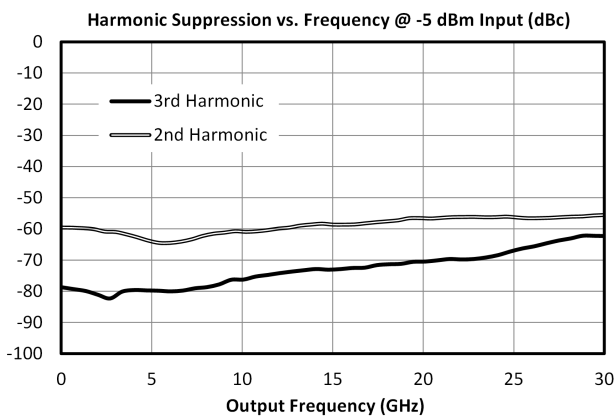
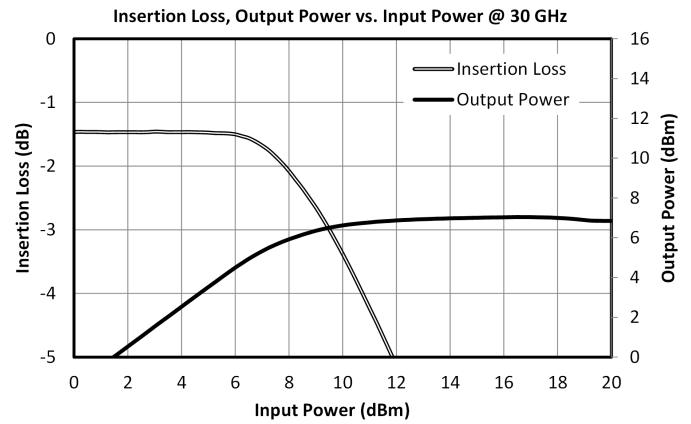
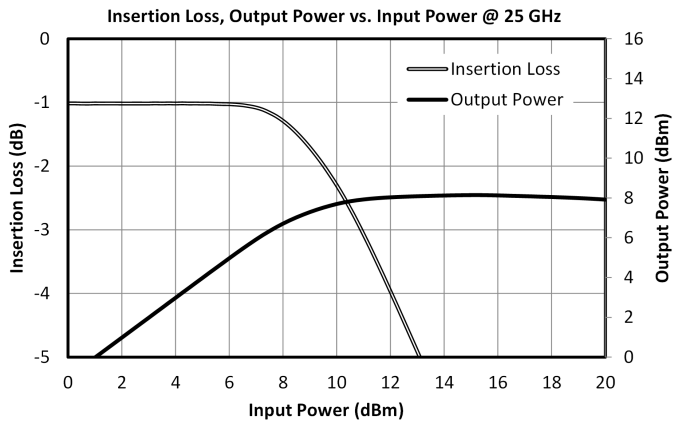
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the connectorized U-package limiter unless otherwise specified. Linear Specifications valid for input power up to the 0.1dB compression point. See Typical Performance Plots for P0.1dB graph. Min and Max limits are guaranteed at TA=+25°C.

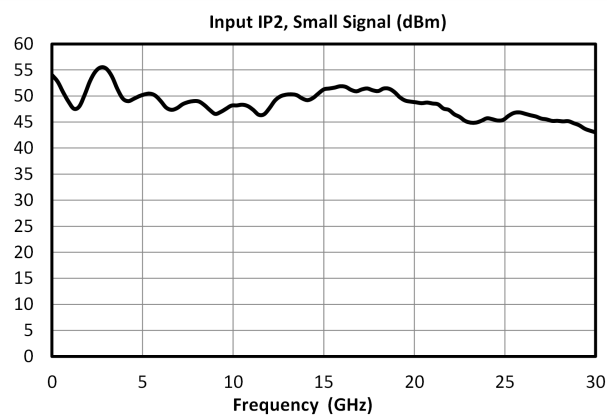
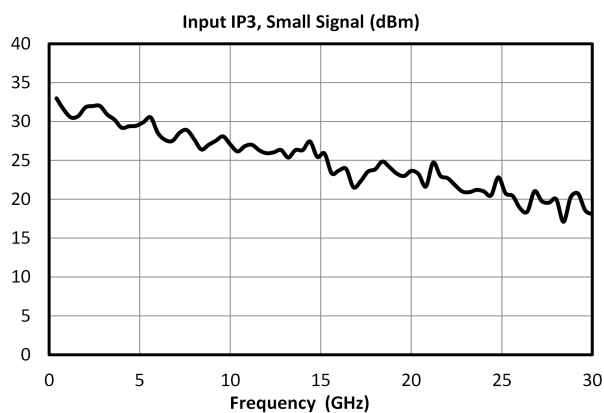
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Insertion Loss	DC – 30GHz	0	30	-	0.8	2.5	dB
Return Loss	DC – 30GHz	0	30	-	24	-	dB
Flat Leakage	-	-	-	-	7	-	dBm
Input P1dB	-	-	-	-	10	-	dBm
Flat Leakage at 1W	-	-	-	-	7	-	dBm
Input 1dB Compression	-	-	-	-	10	-	dBm

Typical Performance Plots









Input Power at Observed Failure

Power handling specification is based on tests performed at different combinations of temperature and frequency. Input power was increased until catastrophic failure was observed. Results are shown in the following table. The power handling specification listed in the Absolute Maximum Ratings section is based on the worst observed power handling derated by 3dB.

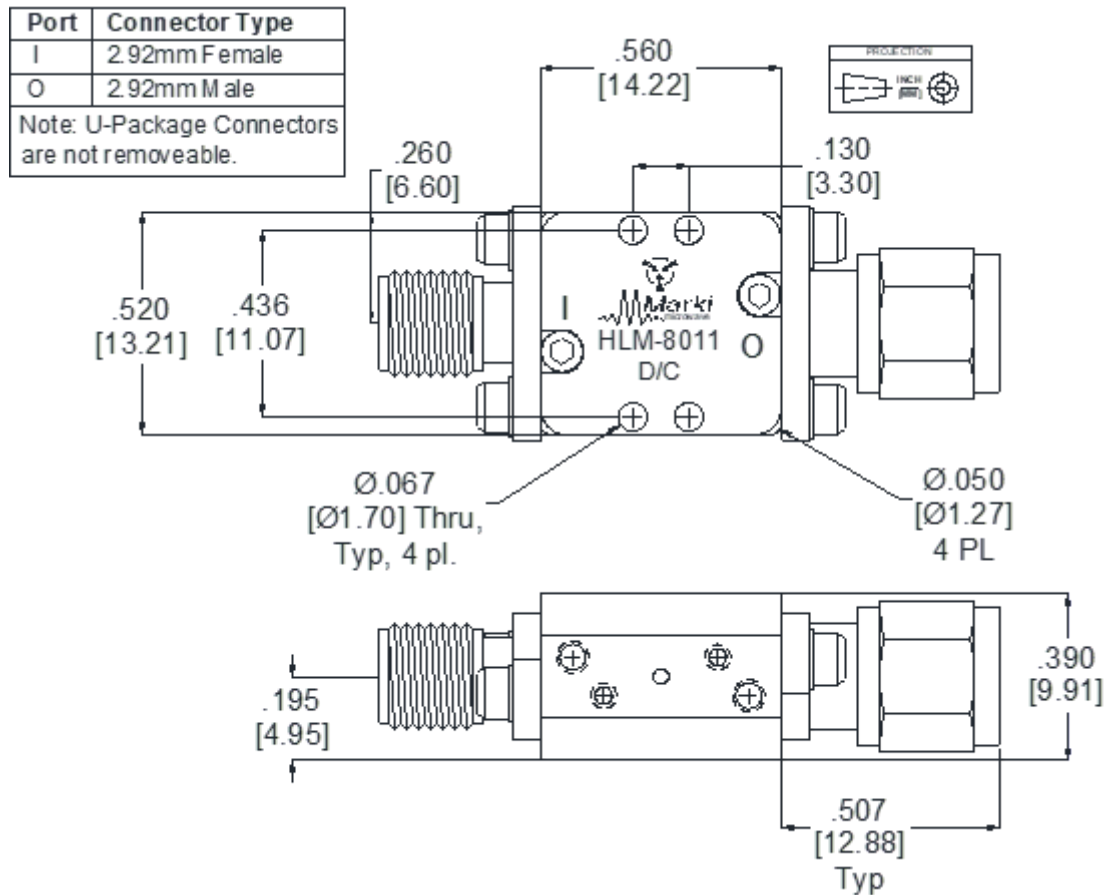
Frequency	Maximum Average Power Handling	Unit	Frequency	Maximum Peak Power Handling	Unit
2 GHz	+36.5	dBm	2 GHz	13	W
30 GHz	+33.0	dBm	18 GHz	9	W

HLM-8011U

Low Flat Leakage DC-30GHz Limiter

Mechanical Data

Outline Drawing



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